



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

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EXECUTIVE COMPLIANCE AGREEMENT

UNIVERSITY OF VIRGINIA

FOR

the UNIVERSITY OF VIRGINIA FACILITIES

Registration No. VAR040073 and Registration No. 40200

IR Nos. 291514, 291839

This is an Executive Compliance Agreement ("Agreement" or "ECA") between the University of Virginia (UVA) and the Virginia Department of Environmental Quality (DEQ) pursuant to the Director's authority, as set forth in §§ 10.1-1185, §§ 10.1-1192, §§ 10.1-1309, §§ 10.1-1316, § 62.1-44.15, and §§ 10.1-1455 of the Code of Virginia (Va. Code), to administer and enforce the State Water Control Law, State Air Pollution Control Law, and Virginia Waste Management Act and regulations.

UVA is a public educational institution located in Charlottesville, Virginia. Pursuant to Title 23, Chapter 9 of the Code of Virginia, "the Rector and Visitors of the University of Virginia" are vested with the authority and responsibility to govern UVA. Nothing in this Agreement shall operate to limit such authority of the Rector and Visitors or otherwise violate the laws of the Commonwealth.

AIR

1. UVA is the owner and operator of the Main Heating Plant, located at Jefferson Park Avenue in Charlottesville, Virginia (Facility). At the time of the violations, UVA was subject to the February 2, 2017 Title V Operating Permit (2017 Title V). The 2017 Title V permit was amended and reissued to UVA on April 13, 2020 (2020 Title V). The Facility includes five boilers (Boilers 1R, 2R, 3R, 4R, and 5) to produce steam for heat and related university operations.
2. On January 30, 2019, DEQ received UVA's Semi-Annual MACT 5D Compliance Report for Boilers 1R, 2R, 3R, 4R, and 5, at the Main Heat Plant. This report stated that, during the second half of 2018, the bag leak detection system for Boiler 2R exceeded the 5% deviation limit. DEQ has no record of notification being made within four hours of the malfunction discovery, or of a follow-up written statement being submitted within 14 days.
 - a. 2017 Title V Permit Condition 181 states: "For Boilers 1R, 2R and 5, you must initiate corrective action within 1 hour of a bag leak detection system alert and complete corrective actions as soon as practical, and operate and maintain the fabric filter system such that the periods which would cause an alert are no more than 5 percent of the operating time during a 6-month period."

- b. 9 VAC 5-20-180.C states: “In the event that any affected facility or related air pollution control equipment fails or malfunctions in such a manner that may cause excess emissions for more than one hour, the owner shall (i) no later than four daytime business hours after the malfunction is discovered notify the board of such failure or malfunction and (ii) within 14 days provide a written statement giving all pertinent facts, including the estimated duration of the breakdown and the demonstrations in subsection G of this section. Owners subject to the requirements of 9VAC5-40-50 C and 9VAC5-50-50 C are not required to provide the written statement prescribed in this subsection for facilities subject to the monitoring requirements of 9VAC5-40-40 and 9VAC5-50-40. When the condition causing the failure or malfunction has been corrected and the facility or control equipment is again in operation, the owner shall notify the board.”
 3. On February 27, 2019, DEQ received UVA’s 2nd Half 2018 Title V Semi-Annual Monitoring / CAM Report (SAMR/CAM Report). This submittal reported that, for one hour on December 18, 2018, the carbon monoxide (CO) emissions were 27.6 lb/hr from Boiler 2R while firing coal. The submittal also reported that the Continuous Opacity Monitoring System (COMS) for the Main Heating Plant stack recorded a six minute average of 36.8% opacity on October 13, 2018. Additionally, Boiler 5562-3-01 (a Group 3 boiler) was tuned 62 months after its initial startup.
 - a. 2017 Title V Permit Condition 13 states: “Short-term emissions from boiler 2R (Ref. 7103-1-02R) shall not exceed any of the limits specified below: ...

	<u>Coal</u>
Carbon Monoxide	19.96 lbs/hr”
 - b. 2017 Title V Permit Condition 20 states: “Visible emissions from the Main Heating Plant stack (Stack Ref. 7103-1) shall not exceed 20 percent opacity (six-minute average), except for one six-minute period per hour of not more than 27 percent opacity as determined by 40 CFR 60, Appendix A, Method 9 or a DEQ-approved method. This condition applies at all times except during startup, shutdown, and malfunction.”
 - c. 2017 Title V Permit Condition 174 states: “For Boilers 1R – 4R and 5 and for boilers listed under Group 3 in Attachment D, you must conduct a performance tune-up every five years, as specified below. Each 5-year tune-up must be conducted no more than 61 months after the initial startup and then 61 months after the previous tune-up. If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup.”
4. On June 6, 2019, DEQ issued Notice of Violation (NOV) No. AVRO001219-001 to UVA for short-term limit exceedances, late boiler tune-up, and for the bag leak detection system for Boiler 2R that exceeded the 5% deviation limit.
5. On July 8, 2019, DEQ met with UVA to discuss the NOV. UVA stated that the snap bands on the recently replaced control equipment on Boiler 2R were not properly sealing, causing the bag leak detection system (BLDS) alarm. All snap bands were replaced on January 14, 2019, and readings on the BLDS returned to normal after boiler startup. The CO violation resolution through permit modifications was in process with DEQ Air permitting staff as further described in paragraph 10 below. UVA’s response to the main stack opacity violation was that the one six-minute average violation was a result of repairs that occurred on Boiler 1R, and residual particulate that remained in the ductwork post repair. Only gas-fire operations were occurring during the elevated opacity reading. The final discussion point was the Boiler MACT required tune-up that was missed on

Boiler 5562-3-01. Due to differing operational staff on this Boiler, there was a miscommunication in the preventative maintenance system at UVA, resulting in the missed deadline.

6. On July 23, 2019, UVA submitted a written response to the NOV, which also detailed actions UVA took to prevent future noncompliance, and actions for repairs at the Facility.
7. On August 28, 2019, DEQ received UVA's 1st Half 2019 Semi-Annual Monitoring/Compliance Assurance Monitoring Reports (SAMR/CAM). UVA reported in the SAMR/CAM Report and attachments that on January 2 – 3, 2019, Boiler 5 emitted CO at 23.8 – 26.7 lb/hr for 6 hours while burning coal, that on January 9, 2019, Boiler 1R emitted CO at 8.2 lb/hr for one hour while burning natural gas, that on January 17, 2019, Boiler 2R emitted CO at 21.1 – 31.0 lb/hr for 4 hours while burning coal, that on January 28, 2019, Boiler 2R emitted CO at 26.4 lb/hr for one hour while burning coal, that on February 27, 2019, Boiler 5 emitted CO at 30.0 lb/hr for one hour while burning coal, and that on March 31, 2019, the 30-day rolling average for Boiler 1R sulfur dioxide (SO₂) emissions while burning coal was 0.19 lb/MMBTU. Additionally, UVA reported that at the end of March 2019, Boilers 7103-1-01R and 7103-1-02R measured sorbent injection rates below the recommended low level and no alarms were activated.

- a. 2017 Title V Permit Condition 12 states: "Short-term emissions from the Boiler 1R (Ref. 71031-01R) shall not exceed any of the limits specified below: ...

	Coal	Natural Gas
Carbon Monoxide	"---	7.82 lbs/hr"
Sulfur Dioxide	0.18 lbs/MMBTU ⁽¹⁾	--- "

30-day rolling average

- b. 2017 Title V Permit Condition 13 states: "Short-term emissions from boiler 2R (Ref. 7103-102R) shall not exceed any of the limits specified below: ...

	Coal	Natural Gas
Carbon Monoxide	19.96 lbs/hr	7.82 lbs/hr"

- c. 2017 Title V Permit Condition 16 states: "Short-term emissions from Boiler 5 (Ref. 7103-1-05) shall not exceed any of the limits specified below: ...

	Coal	Natural Gas
Carbon Monoxide	23.63 lbs/hr	9.26 lbs/hr"

- d. 2017 Title V Permit Condition 28 states: "Sorbent injection rate measurement devices for each scrubber (Ref. 7103-SB1, 7103-SB2 and 7103-SB5) shall be equipped with audible alarms to detect injection rates outside of the high and low sorbent injection rates recommended by the scrubber manufacturer. The alarm shall be set to sound each time the sorbent injection rate is outside the recommended range. Corrective action shall be taken each time the alarm is activated, such that the scrubber is returned to the recommended injection rate. The alarm system shall be configured and tested in accordance with approved procedures which shall include, as a minimum, common industry practices. The alarm system shall be in operation when any scrubber is operating."

8. On October 4, 2019, DEQ staff met with UVA staff to discuss next steps for the enforcement cases, including steps UVA has taken to prevent future noncompliance. UVA agreed to review their compliance program with emphasis on implementing solid waste best management practices

and strengthening contract language and oversight. DEQ suggested UVA could benefit from an independent review of the Main Heat Plant air permits relative to normal and atypical operational constraints.

9. On October 8, 2019, DEQ issued NOV No. AVRO001219-002 to UVA for a Boiler 1R SO₂ lb/MMBTU limit exceedance, CO limit exceedances and an audible alarm malfunction at the Facility. UVA responded immediately, and provided an update that the significant amendment to the Title V Air Permit was in process.
10. In the course of evaluating the Permit application and arriving at a final decision to approve the significant amendment, DEQ deemed the application complete on May 6, 2019, and solicited written public comments by placing a newspaper advertisement in "The Daily Progress" newspaper on February 25, 2020. The thirty-day comment period ended on March 26, 2020. On April 13, 2020, DEQ issued the amended Title V Air Permit to UVA to add a new boiler and amended to a 30-day rolling average basis for CO emissions to account for periods outside of steady state operation, as well as the installation of CO CEMS. The amendment resolves the CO emissions violations as referenced in the June 6, 2019 NOV and the October 8, 2019 NOV.

WATER

11. UVA is the owner and operator of a municipal separate storm sewer system (MS4), and is subject to MS4 General Permit Registration No. VAR040073 (Permit).
12. On July 10, 2019, DEQ received a report from UVA of a discharge of concrete slurry decant water to UVA's storm system, which drains to Meadow Creek. On July 11, 2019, UVA reported to DEQ that approximately 1,200-1,900 gallons of concrete slurry decant water was dumped into the storm drains as part of UVA's renovation and construction work that occurred between July 3, 2019 and July 10, 2019. UVA reported that the concrete slurry decant water pH was 12.33.
13. On July 29, 2019, DEQ issued NOV No. 2019-VRO-0018 to UVA for the unpermitted discharge of concrete slurry decant water into Meadow Creek.
14. On August 16, 2019, DEQ met with UVA to discuss the July 2019 NOV for unpermitted discharges. During the meeting UVA informed DEQ that contract template language was changed in order to draw contractor's attention to unpermitted discharges, as well as an update to the Standard Operating Procedures in house at UVA to increase awareness on not only new constructions, but renovations as well.
15. On August 22, 2019, DEQ received a report of a fish kill in Meadow Creek, about a mile downstream of UVA. DEQ immediately investigated and observed hundreds of dead fish in Meadow Creek, and what appeared to be concrete laden water discharging from UVA's storm system into Meadow Creek. Throughout the investigation, DEQ observed significant solids accumulation in Meadow Creek. DEQ biologists measured specific conductivity and pH in Meadow Creek, just downstream of the UVA storm sewer discharge culvert, and recorded a pH of 11.72, and a specific conductivity of 3097 μ S. On August 27, 2019, UVA reported to DEQ that approximately 45,000-50,000 gallons of concrete laden water was discharged into the storm drain as part of UVA's demolition of UHall.
16. Va. Code 62.1-44.5 states that: "Except in compliance with a certificate or permit issued by the Board or other entity authorized by the Board to issue a certificate or permit pursuant to the chapter, it shall be unlawful for any person to: Discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances; Otherwise alter the physical, chemical, or biological properties of state waters and make them detrimental to the public health,

or to animal or aquatic life, or to the uses of such waters for domestic or industrial consumption, or for recreation, or for other uses..."

17. 9 VAC 25-31-50.A states that: "Except in compliance with a VPDES permit, or another permit issued by the board or other entity authorized by the board, it shall be unlawful for any person to: Discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances; Otherwise alter the physical, chemical, or biological properties of such state waters and make them detrimental to the public health, or to animal or aquatic life, or to the use of such waters for domestic or industrial consumption, or for recreation, or for other uses..."
18. MS4 General Permit Section III.F states that: "Unauthorized stormwater discharges. Pursuant to § 62.1-44.5 of the Code of Virginia, except in compliance with a state permit issued by the department, it shall be unlawful to cause a stormwater discharge from a MS4."
19. On September 4, 2019, DEQ's Office of Stormwater Management reviewed UVA's annual standards and specifications (AS&S) program and observed that there were three construction sites operating without a current General VPDES Permit for Discharges of Stormwater from Construction Activities as well as several programmatic items not meeting DEQ expectations. UVA submitted AS&S documentation to DEQ for review on December 23, 2019, and on February 12, 2020, DEQ responded to UVA asking for additional information.
20. 9 VAC 25-880-50.A requires that: "Any operator proposing a new stormwater discharge from construction activities shall submit a complete and accurate registration statement to the VSMP authority prior to the commencement of land disturbance."
21. On September 6, 2019, DEQ issued NOV No. 2019-VRO-0022 to UVA for the unpermitted discharge and subsequent fish kill. UVA responded to the NOV immediately, and met with DEQ on October 4, 2019 to discuss the multi-media noncompliance and actions taken by UVA. UVA agreed to review in house practices for contract awards and review pollution prevention procedures on the UVA grounds.

WASTE:

22. In December 2018 and June 2019, DEQ received complaints regarding improper disposal of concrete debris from UVA demolition projects on private property. DEQ investigated, and coordinated the removal of material, which had rebar or other plastics.
23. 9 VAC 20-81-40 states that: "No person shall operate any sanitary landfill or other facility for the disposal, treatment, or storage of solid waste without a permit from the director..."
24. On August 16, 2019, DEQ met with UVA to discuss the complaints over improper waste disposal from construction activity. DEQ included discussions regarding the appropriate disposal of demolition debris, what could be used as clean fill, and what material needed to go to a landfill. Waste and contractor management issues were discussed between DEQ and UVA on October 4, 2019. UVA submitted a letter to DEQ on January 10, 2020 that provided a progress update on compliance improvements and met with DEQ on February 13, 2020 to discuss these initiatives and next steps.

To remedy these matters, the University of Virginia and DEQ agree to the schedule of action in Appendix A.

This Agreement shall become effective upon the date of its execution by the Director of the Department of Environmental Quality or his designee. The University of Virginia agrees to be bound by any

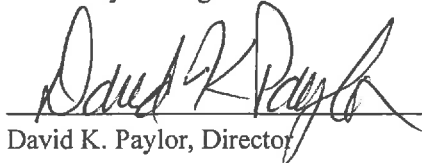
compliance dates in this Agreement that may predate its effective date.



James E. Ryan, President
University of Virginia

6-29-2020

Date



David K. Paylor, Director
Department of Environmental Quality

7/2/2020

Date

UNIVERSITY OF VIRGINIA

APPENDIX A

1. Within 30 days of the effective date of this ECA, UVA shall respond to comments DEQ OSWM staff provided on February 12, 2020, to address outstanding AS&S noncompliance.
2. Within 30 days of the effective date of this ECA, UVA shall develop and maintain a list of permitted waste disposal facilities in central Virginia as well as a list of local government contacts in central Virginia who will be consulted with prior to hauling clean fill to that locality.
3. By July 31, 2020, UVA shall update construction procurement and contract language to strengthen contractor selection and accountability for projects run thru UVA Facilities Management (FM).
4. By September 30, 2020, UVA shall develop a Waste Management Plan template that their contractors can use and UVA-specific Standard Operating Procedures for managing solid and hazardous waste on demolition and construction sites throughout the UVA campus.
5. By November 30, 2020, UVA shall provide the executive summary of an audit report detailing the analysis performed by UVA's consultant of the operations at the Main Heating Plant. This executive summary shall include the consultant recommended actions, i.e. operational changes or permit modification, etc., and shall also include UVA's plan of action (with timelines) in response to the recommendations.
6. By December 31, 2020, UVA shall develop and provide training materials to be used to educate contractors and in-house staff for construction and demolition best management practices.
7. Submit quarterly progress reports to DEQ, with the first report being due **July 10, 2020**. Subsequent Progress Reports will be due October 10 and January 10. The quarterly progress reports shall contain:
 - a. A summary of all work completed since the previous progress report in accordance with this Agreement;
 - b. A projection of the work to be completed during the upcoming quarterly period in accordance with this Agreement; and
 - c. A statement regarding any anticipated problems in complying with this Agreement.
8. DEQ Contact:

Correspondence required by this Agreement shall be submitted to:

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Enforcement Specialist Senior
VA DEQ –VRO
4411 Early Road; Mailing P.O. Box 3000
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